TO: Director, National Institute for Occupational Safety and Health

FROM: California Fatality Assessment and Control Evaluation (FACE) Program

SUBJECT: Elevator Service Technician Dies After Being Crushed by an Elevator Counter-Weight in California

SUMMARY
California FACE Report #93CA010
November 15, 1994

A 42-year-old, white, non-Hispanic, male elevator service technician (the victim) died after being crushed by an elevator counter-weight while at work. The victim was an employee of an elevator repair company and was doing general maintenance contract work for a hotel. He was working alone at the time of the incident. The service dispatcher at his company had tried to reach him (via his pager) on several occasions earlier on the afternoon of the incident. When the dispatcher was unable to reach the victim, another service technician (co-worker) was sent to the hotel to find him. The co-worker met with the hotel's chief engineer and together they looked in the area where the victim had last been seen working. The victim was found in an elevator lying over counterweights and pinned between spreader beams on the second floor of the hotel. The victim may have been using the spreader beam between car #1 and #2 as a work station. The co-worker stated that the victim was obviously already deceased. The hotel engineer called 911 and police and paramedics arrived a short time later. The CA/FACE investigator concluded that, in order to prevent similar future occurrences, employers should:

· require rigid screens or walls between adjacent hoistways with side-mounted counterweights.

· have signs posted between the elevator spreader beams stating that caution should be taken due to the position of the counterweights.

INTRODUCTION

On November 12, 1993, a 42-year-old, white, non-Hispanic, male elevator service technician died after being crushed by an elevator counterweight. The CA/FACE investigator was informed of this incident by a California Occupational Safety & Health Administration (Cal/OSHA) safety engineer on November 18, 1993. The CA/FACE investigator conducted an interview with the victim's employer on the following day. A copy of the Cal/OSHA Report, Coroner's Autopsy Report, and the City Department of Building and Safety's Accident Investigation Report were all obtained by the CA/FACE investigator.

The victim had worked with his employer as a union employee on a semi-monthly contract for a 10 year period. According to the victim's employer the victim was an experienced elevator technician. The employer was a machinery maintenance company and had been in

business since 1989 when the parent company split into two separate companies. Before that time the company had been in business since 1869. The victim's job description involved doing general maintenance work on elevators. There was a generic task list which the company provided although the victim had the option of using his own task list if he wished to do so. This list also included specific safety training for the job. The employer provided and maintained a written Injury and Illness Prevention Program (IIPP) for employees. The company employed 51 workers and 38 of those employees were field employees, having similar job descriptions to that of the victim.

INVESTIGATION

The employer in this incident was a machinery maintenance company which had been contracted by a hotel to do elevator maintenance work. The victim had been sent to the location by his employer to perform maintenance repair work. According to a statement made by the victim's supervisor, the dispatcher had indicated that there had been some delays along the victim's route that afternoon. The dispatcher had also tried to contact the victim (via his pager) several times early in the afternoon. The supervisor asked another service technician (co-worker) to go by the hotel and find the victim. The co-worker was instructed to contact his supervisor when he found his co-worker.

The co-worker arrived at the hotel at approximately 4:15 pm and was met by the hotel's chief engineer. They looked for the victim in several locations before hearing his two way radio from inside the hoistway. The co-worker yelled the victim's name but received no response. They then proceeded upstairs to the second floor and opened the hall doors of elevator #2. The victim was seen laying between elevators #1 & #2 and over the counterweights of elevator #1, pinned between two spreader beams. The co-worker stated that the victim was obviously already deceased. The hotel engineer called 911 at approximately 4:25 pm. Police and paramedics arrived at approximately 4:35 pm.

On the day of the incident, the victim had been working alone. The elevator car on which the victim was working (car #2) was located approximately 18" to 24" above the first floor landing. The top of the car was several feet below the second floor landing. The car top inspection station was activated, the inspection switch was on the inspect position, and the emergency stop switch was in the stop position. It was believed by the investigators that the victim had been cutting lengths of foam pipe insulation. After the victim cut the pipe he would apply some contact cement to it and place it on the top flanges of the spreader beams. This would act as insulation behind the traveling cables to help to prevent wear. A pocket knife was found laying at the end of the spreader beam next to the rear wall of the hoistway between cars #1 & #2 where the side mounted counterweights of car #1 are located. An open tube of contact cement was also found in the pit of car #1.

The CA/FACE investigator, Cal/OSHA investigator and a consultant engineering company reached the same possible conclusion, that the victim may have been using the spreader beam (between cars #1 & #2) as a work station for convenience. At the time of the incident the victim may have been leaning forward slightly and over his work. This would have put him directly in the path of the descending counterweight of car #1 which struck him in the back of the head.

CAUSE OF DEATH

The Coroner's Autopsy Report lists the cause of death as multiple traumatic injuries.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Employers should require rigid screens or walls between adjacent hoistways with side-mounted counterweights.

Discussion: This incident may have been prevented if there had been a screen in place between the victim and the counterweight.

Recommendation #2: Employers should have signs posted between the elevator spreader beams stating that caution should be taken due to the position of counterweight.

Discussion: A visual reminder such as a sign may have aided the victim by reminding him of the dangers of working directly in the path of the counterweight.

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FATALITY ASSESSMENT AND CONTROL EVALUATION PROGRAM

The California Department of Health Services, in cooperation with the Public Health Institute and the National Institute for Occupational Safety and Health (NIOSH), conducts investigations of work-related fatalities. The goal of this program, known as the California Fatality Assessment and Control Evaluation (CA/FACE), is to prevent fatal work injuries in the future. CA/FACE aims to achieve this goal by studying the work environment, the worker, the task the worker was performing, the tools the worker was using, the energy exchange resulting in fatal injury, and the role of management in controlling how these factors interact. NIOSH-funded, state-based FACE programs include: Alaska, California, Iowa, Kentucky, Massachusetts, Michigan, Minnesota, Nebraska, New Jersey, New York, Oklahoma, Oregon, Washington, West Virginia, and Wisconsin.

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Additional information regarding the CA/FACE program is available from:

California FACE Program
California Department of Health Services
Occupational Health Branch
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